

FIGURE 1

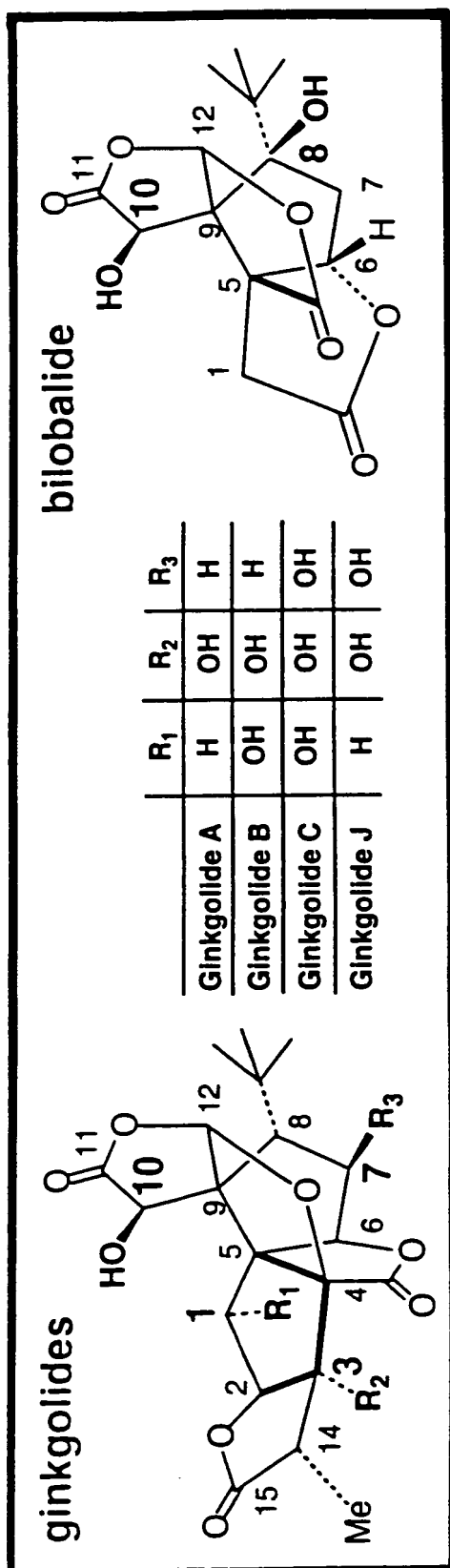


FIGURE 2

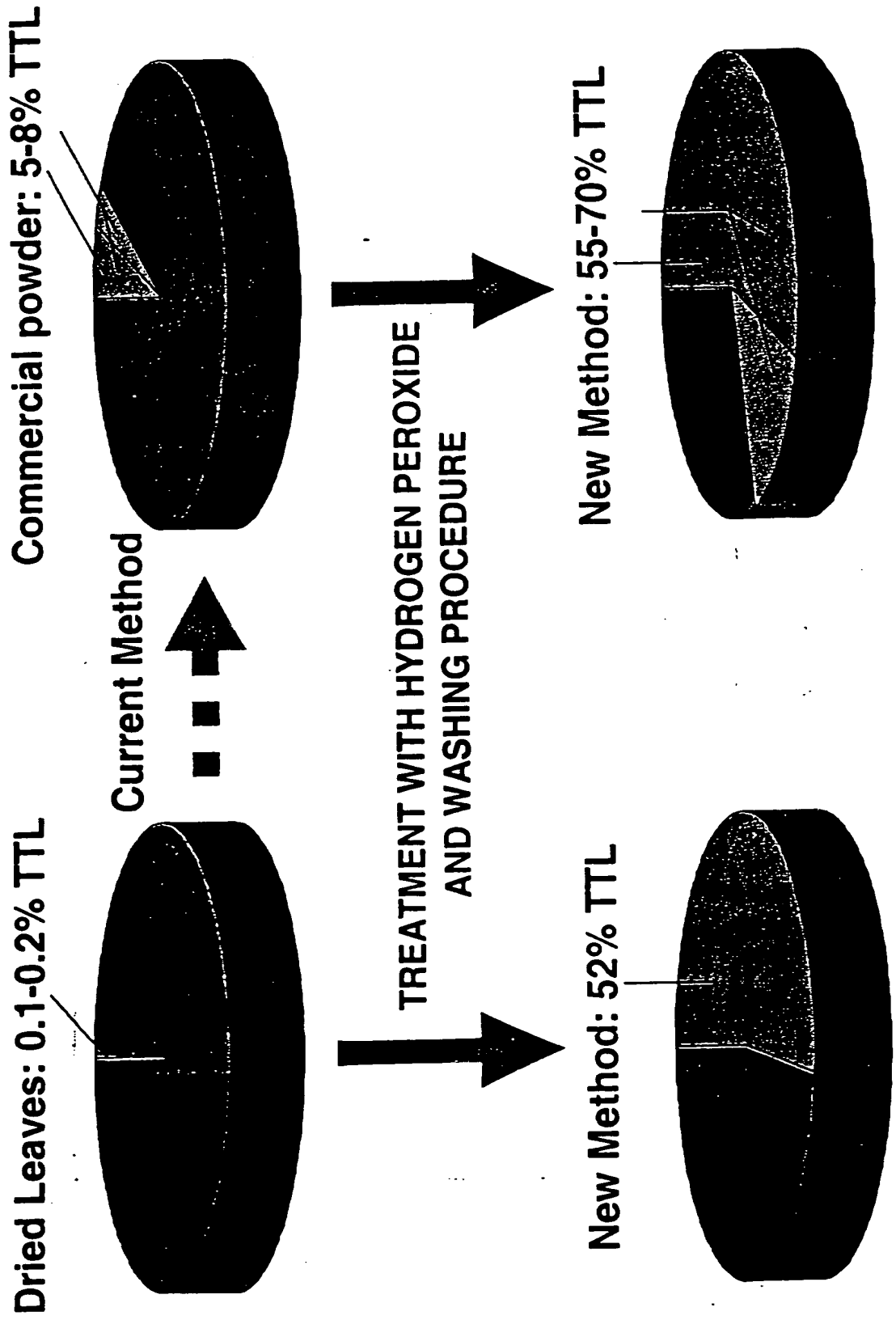


FIGURE 3 From commercial powder with 5-8% of terpene trilactones(ginkgolides A/B/C/I/J and bilobalide)

1. SOLUTION

Suspend 25 g powder and boil for 1 h in

A: 500 ml 5% H_2O_2

B: 5% H_2O_2 / 1% H_2SO_4

C: 5% H_2O_2 and adjust to pH 4.5-6 before extraction

2. EXTRACTION

Extract with ethyl acetate (1st: 250 ml, 2nd: 125 ml)

Combine organic layers

3. PURIFICATION

Wash organic layer with

A: sat. NaHCO_3 (1st: 150 ml, 2nd/3rd: 75 ml)

B: sat. NaSO_3 (1st: 150 ml, 2nd: 75 ml)

C: Water (75 ml)

D: 80% NaCl (150 ml)

4. Workup

Dry organic layer over Na_2SO_4 and remove solvent

Analyse samples by quantitative NMR (in DMSO/maleic acid/acetic acid)

RESULTS: get 1.3-1.9 g terpene trilactones from 25 g powder (5.2-7.6%)

PURITY: 55-70% \pm 5 %

(without column chromatography or crystallization)

FIGURE 4 20 ml oxidation solution, 10 min boiling, only 1st extraction (15 ml EtOAc), washing with sat. NaHCO_3 , sat. $\text{Na}_2\text{S}_2\text{O}_3$ and sat. NaCl (15 ml each).

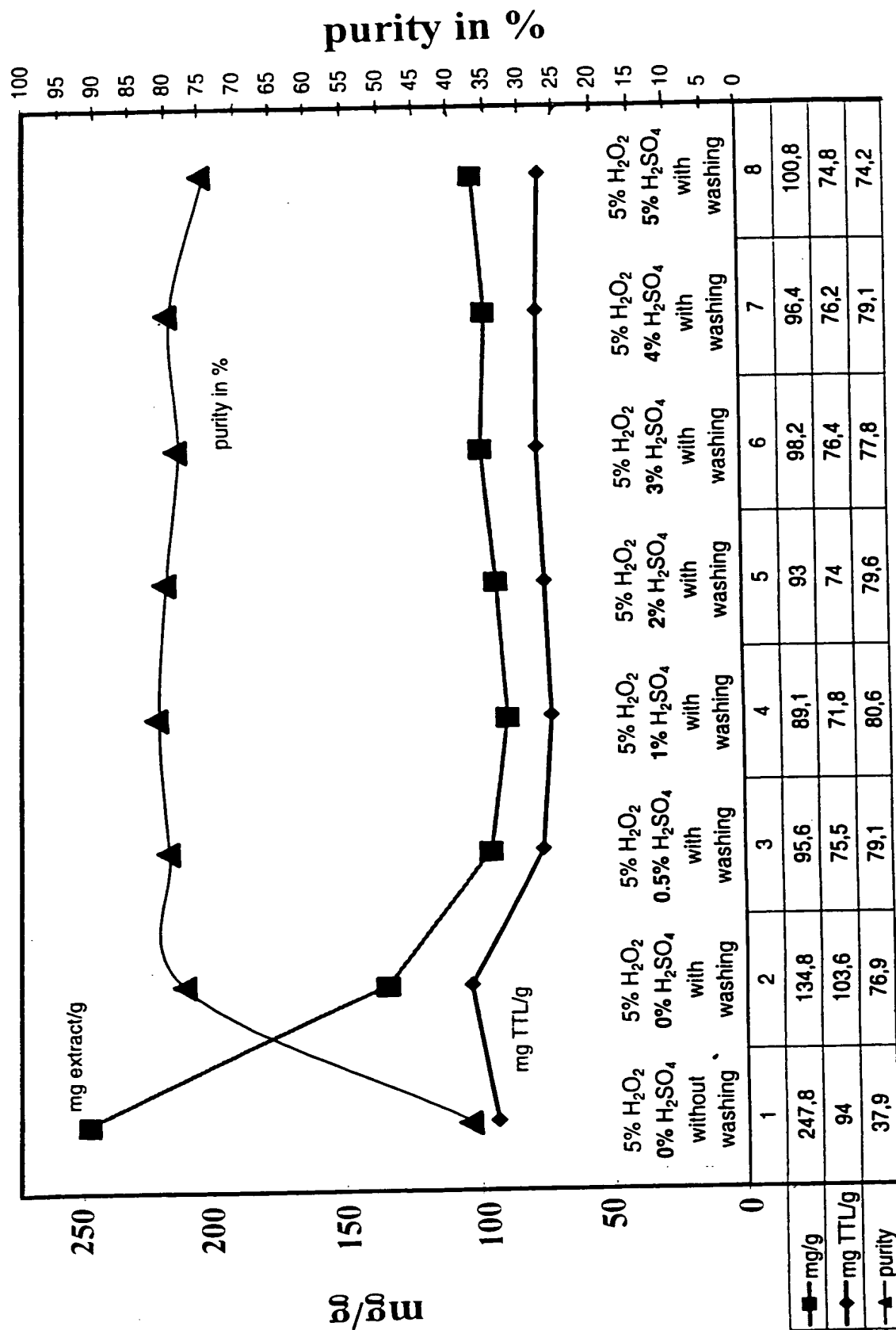


FIGURE 5

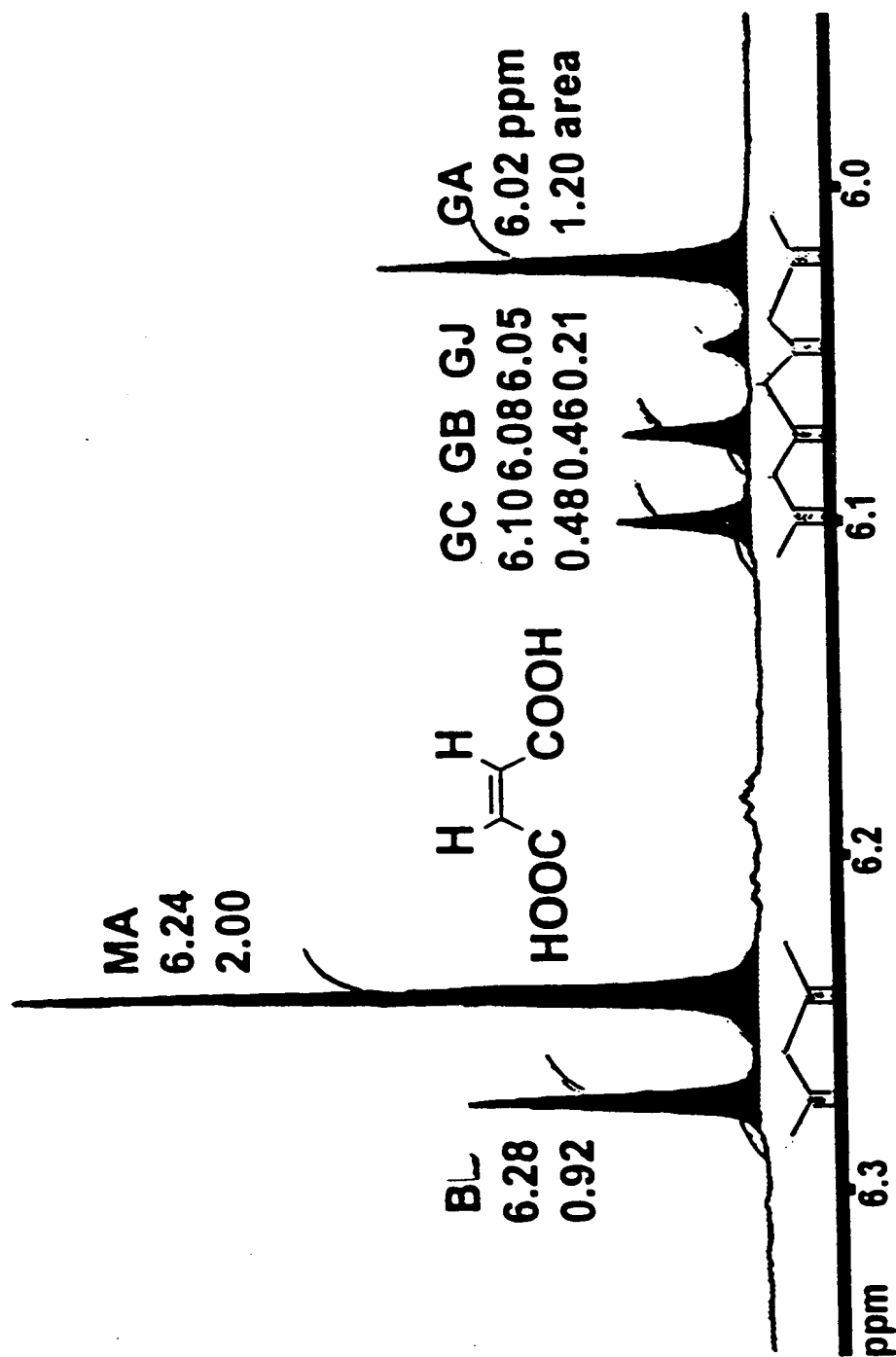
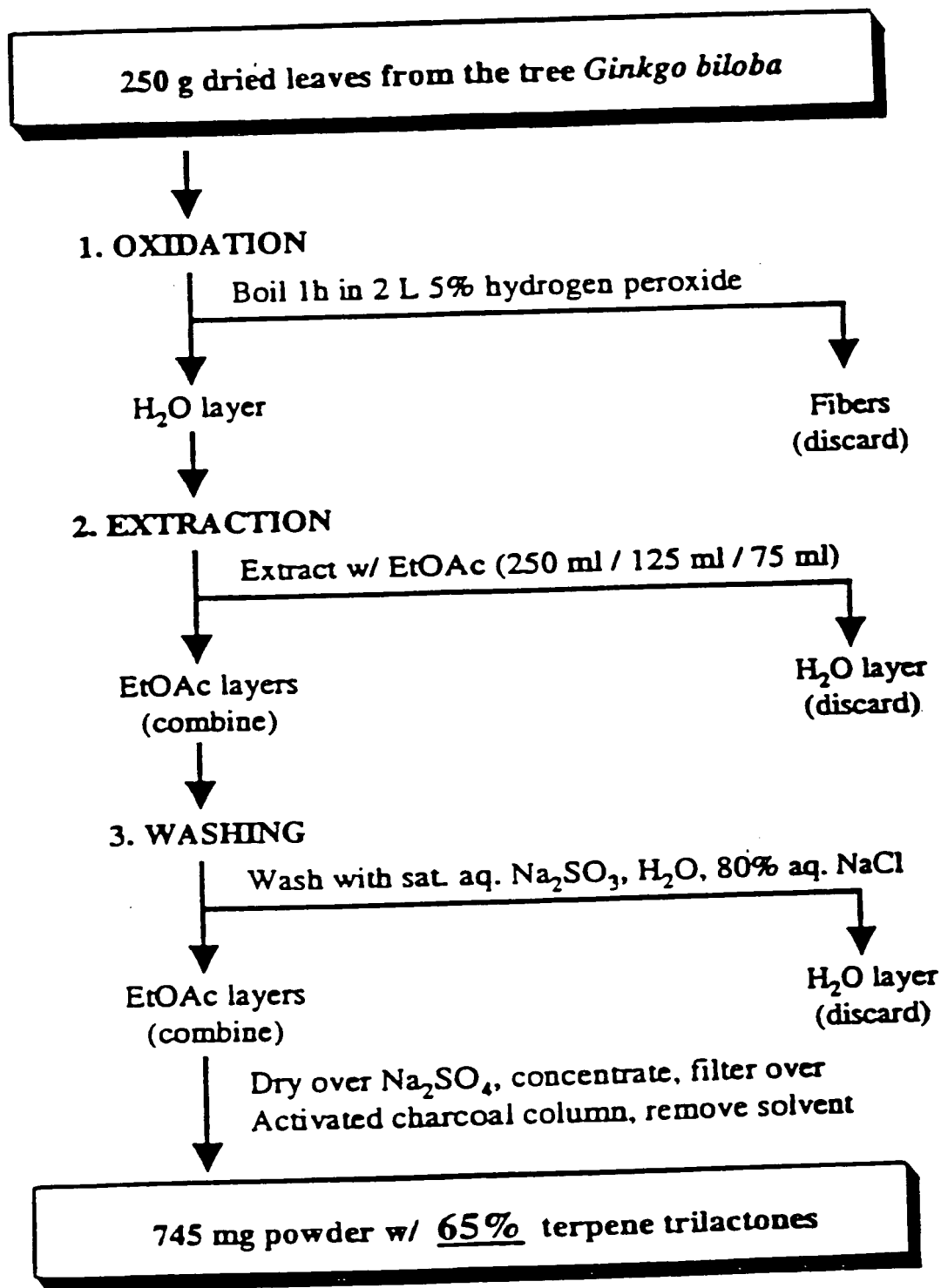


FIGURE 6



Optimized extraction protocol for dried leaves.

FIGURE 7A

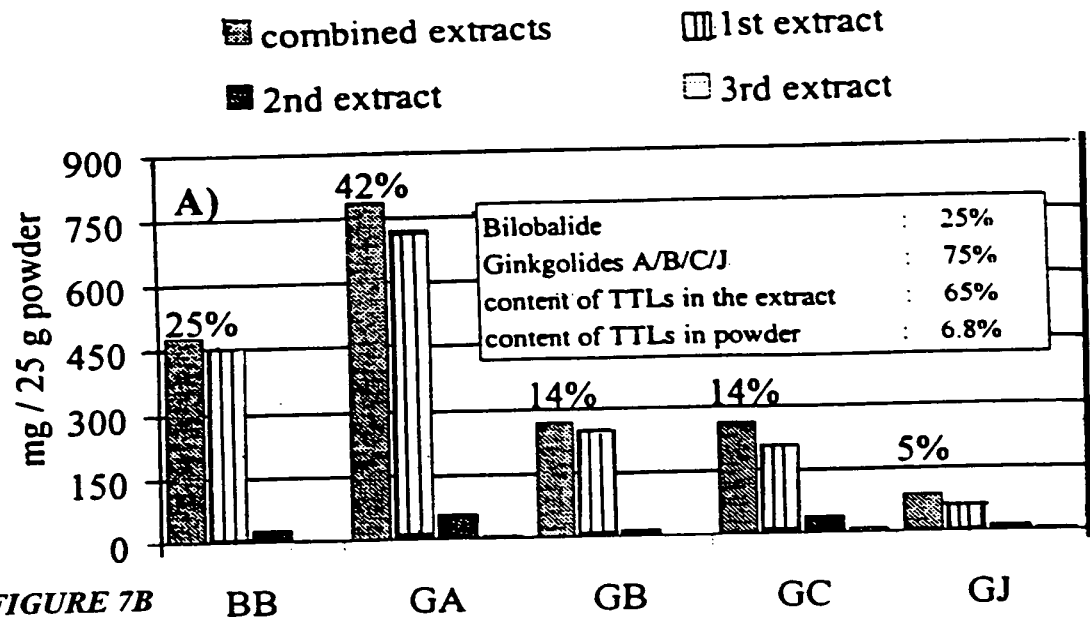


FIGURE 7B

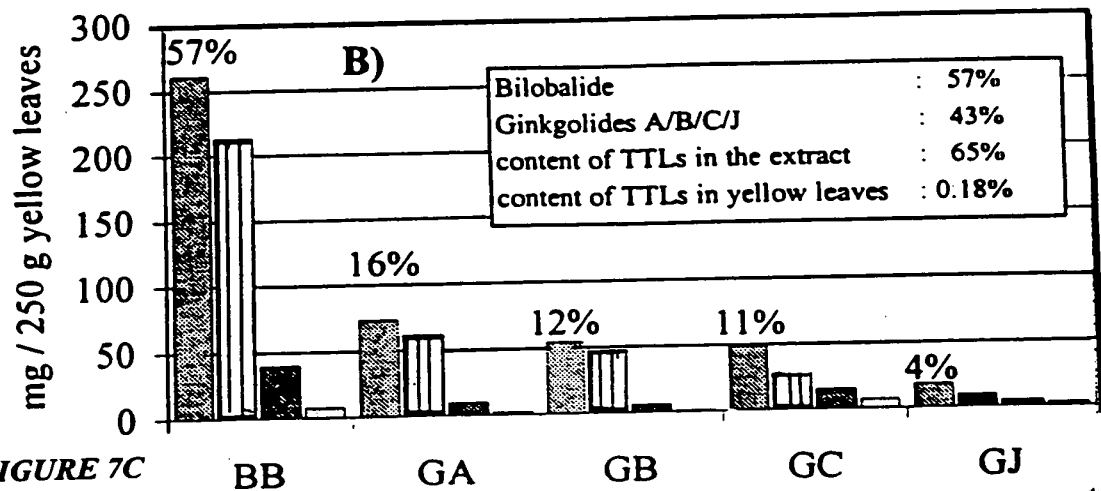


FIGURE 7C

